

## ABSTRACT

In-Network-Caching is one of the main features of Named Data Networking (NDN). It relies on the storage capacity of NDN routers and the content dissemination mechanism in the NDN, which needs to be improved to meet the increasing network requirements. Uniform is a distribution to provide CS capacity to all NDN routers with the same capacity, but this mechanism ignores the different importance of nodes in the network and Leave Copy Down (LCD) has a slow content dissemination mechanism. It is also affected by Least Recently Used (LRU) which has no content replacement mechanism based on its popularity.

This capstone design proposes to improve the performance of the cache policy by determining the cache router using centrality and allocating CS capacity to the selected cache router. And by accelerating content dissemination by broadcast, it is expected to fulfill user content requests quickly. On the other hand, determining the popularity of content on the NDN router can also help increase user satisfaction because the desired content will continue to be in the router cache. The icarus simulator will be used to evaluate the performance of the proposed cache policy by looking at several Quality of Service (QoS) parameters such as cache hit ratio (CHR), latency and link load.

The test results of the proposed cache policy can improve the performance of the cache policy on the NDN network. On the WIDE topology, the proposed cache policy can increase CHR by 10%, reduce latency by 6.5 ms from uniform-lcd-lru. While on the NSFNET topology CHR increased by 5% and decreased latency by 2.7 ms from uniform-lcd-lru. In the results of the link load internal cache policy proposed has a higher load on both topologies because each user request is served by the router cache without having to be forwarded to the server. These results are supported by lower external link load values in both topologies. This result shows that the link that leads to the server has a smaller load than other cache policies.

**Keyword :** *Cache Storage Allocation, Cache Placement, Cache Replacement, Named Data Networking.*